

Assessing wetland, riparian, and mesic areas on BLM land across the western United States



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BLM and AIM

Methods

Preliminary Results

Conclusions

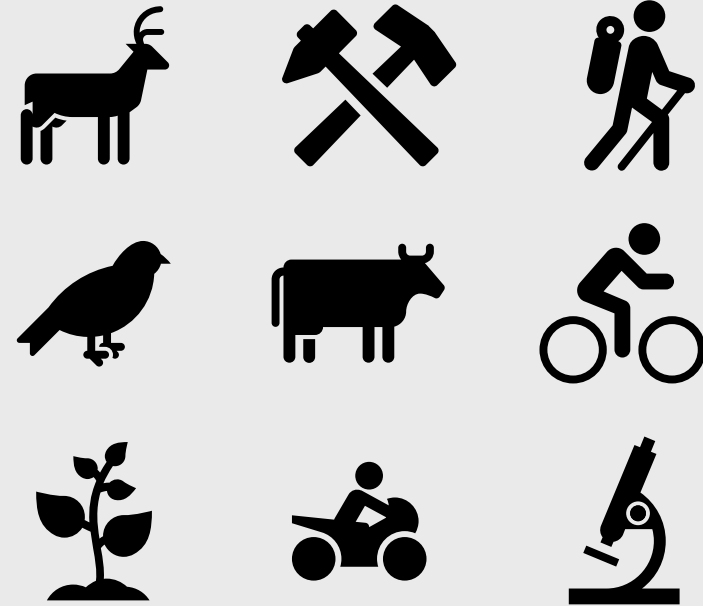


The Bureau of Land Management (BLM)



BLM's Multiple Use Mission

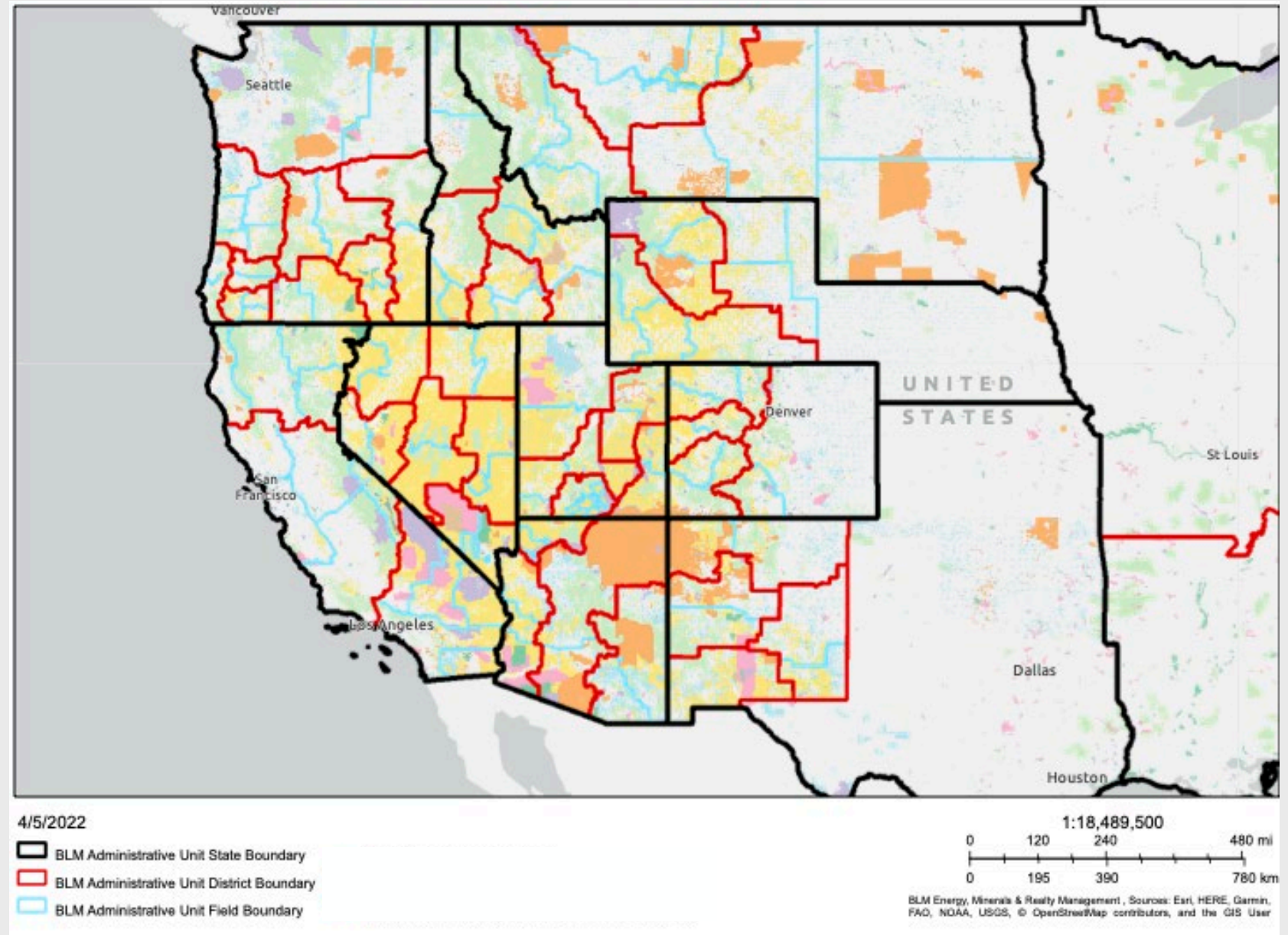
"...ensuring natural, cultural & historic resources are maintained for present and future use."



Source: <https://www.blm.gov/about/our-mission>

Bureau of Land Management (BLM)

- ~250 million acres of land
- 23% of the land area in the west



Assessment, Inventory, and Monitoring Program (AIM)

- Monitors ecological resources
- Standardized
- Quantitative
- Agency-wide



Assessment, Inventory, and Monitoring Program (AIM)

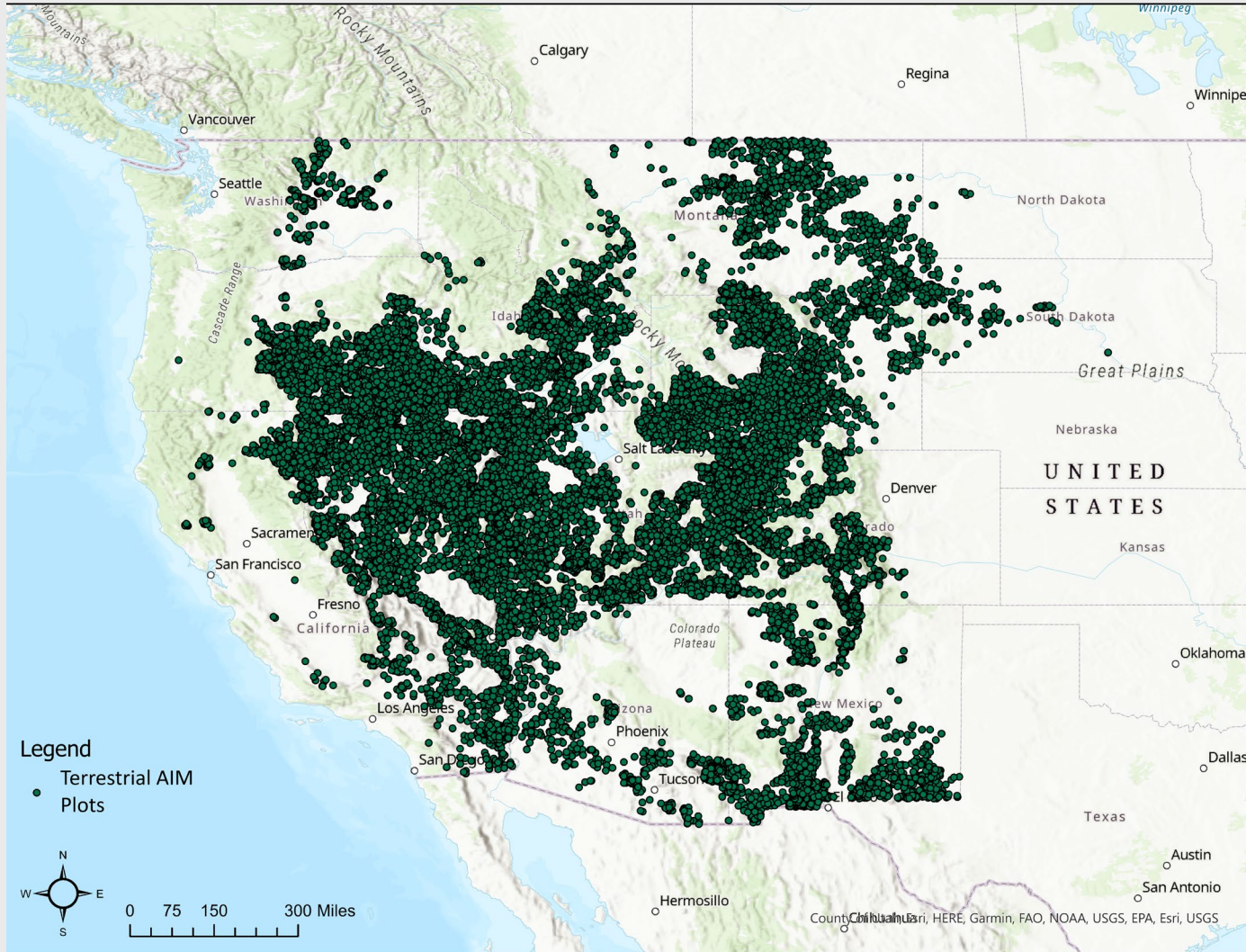
- Two original sampling efforts:

Rivers (Lotic)

Land (Terrestrial)



Terrestrial AIM



- Over 35,000 sites
- 2011-2014 deliberately sampled riparian areas
- After 2014 focused explicitly on uplands
- Never been inventoried for wetlands/riparian areas

Riparian and Wetland AIM

- BLM partnered with CNHP in 2017
- New AIM protocol
 - Wetland, riparian & mesic areas*
- Pilot data collected 2019-2021
- Methods largely based on Terrestrial AIM
 - *Data is comparable*



Terrestrial and Wetland AIM Protocols

- Line-Point-Intercept (LPI) to sample

Vegetation

ground surface

presence/absence of water

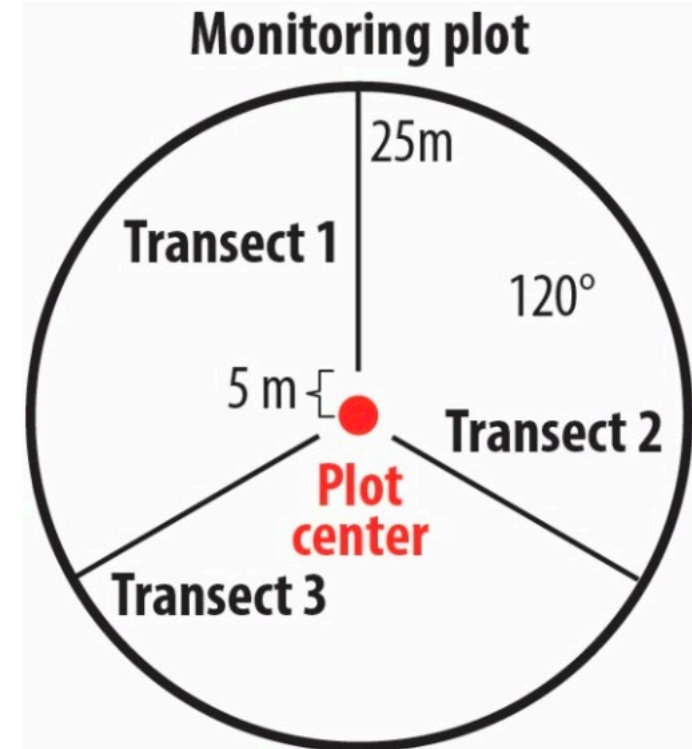


Figure 2. Standard spoke layout for a monitoring plot.

Source: Draft Wetland AIM protocol 2021



Research Objectives

1. Identify wetlands and riparian areas that have been sampled by the Terrestrial AIM program
2. Compare those wetlands to the ones sampled with the Wetland AIM program.
3. Determine if land management agencies need separate protocols for different ecosystems, or if one generalized protocol could effectively monitor across resources.

Finding wetland sites in the Terrestrial Data

Criteria 1

Greater than 50% hydrophytic species

Criteria 2

25-50% hydrophytic species

AND

1. Intersects a National Wetland Inventory Polygon

or

2. Greater than 2% surface water along transects

or

3. Plot center is within 50 m of river, lake, or pond

or

4. Meets criteria for the pre-2014 Riparian Strata

Finding wetland sites in the Terrestrial Data

VEGETATION CRITERIA

- Relative cover
- Hydrophytic species:
 - Obligate*
 - Facultative Wetland*
 - Facultative*
- Wetland AIM target population
 - dominated by hydrophytic species*



Finding wetland sites in the Terrestrial Data

CRITERIA 2

- Less conservative than Criteria 1
- Plots may not fall completely within wetlands
- Secondary evidence of hydrologic influence

25-50% hydrophytic species

AND

1. Intersects a National Wetland Inventory Polygon

or

2. Greater than 2% surface water along transects

or

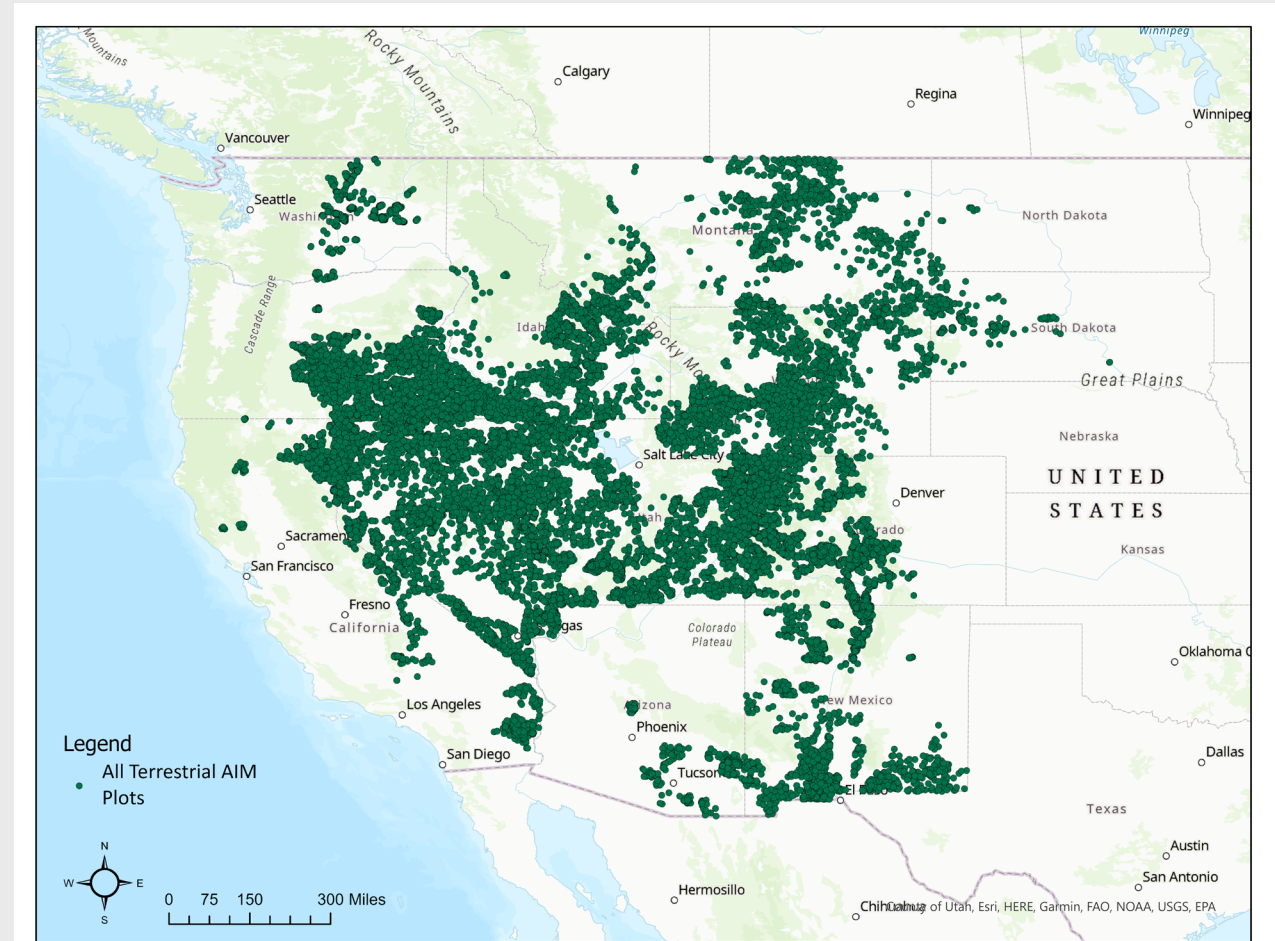
3. Plot center is within 50 m of river, lake, or pond

or

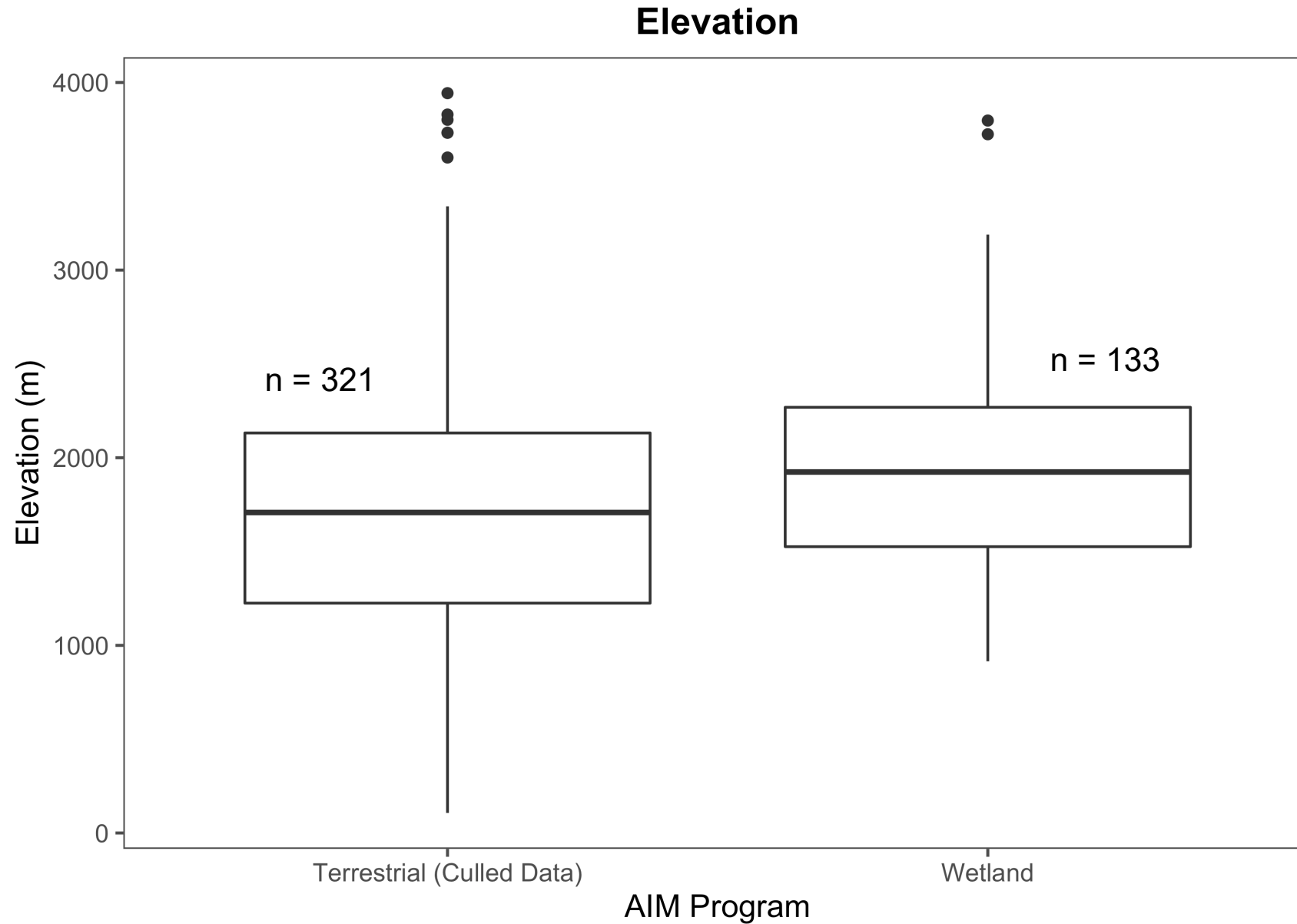
4. Meets criteria for the pre-2014 Riparian Strata

Preliminary Results

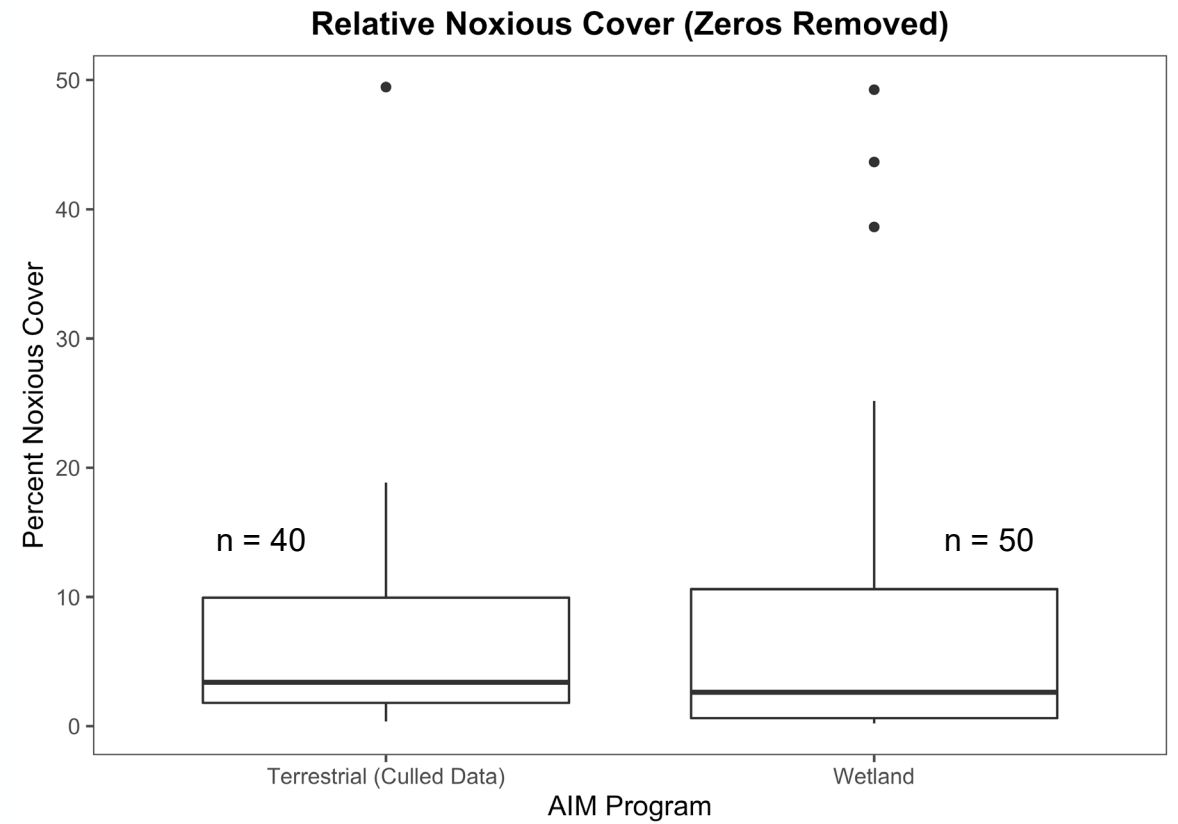
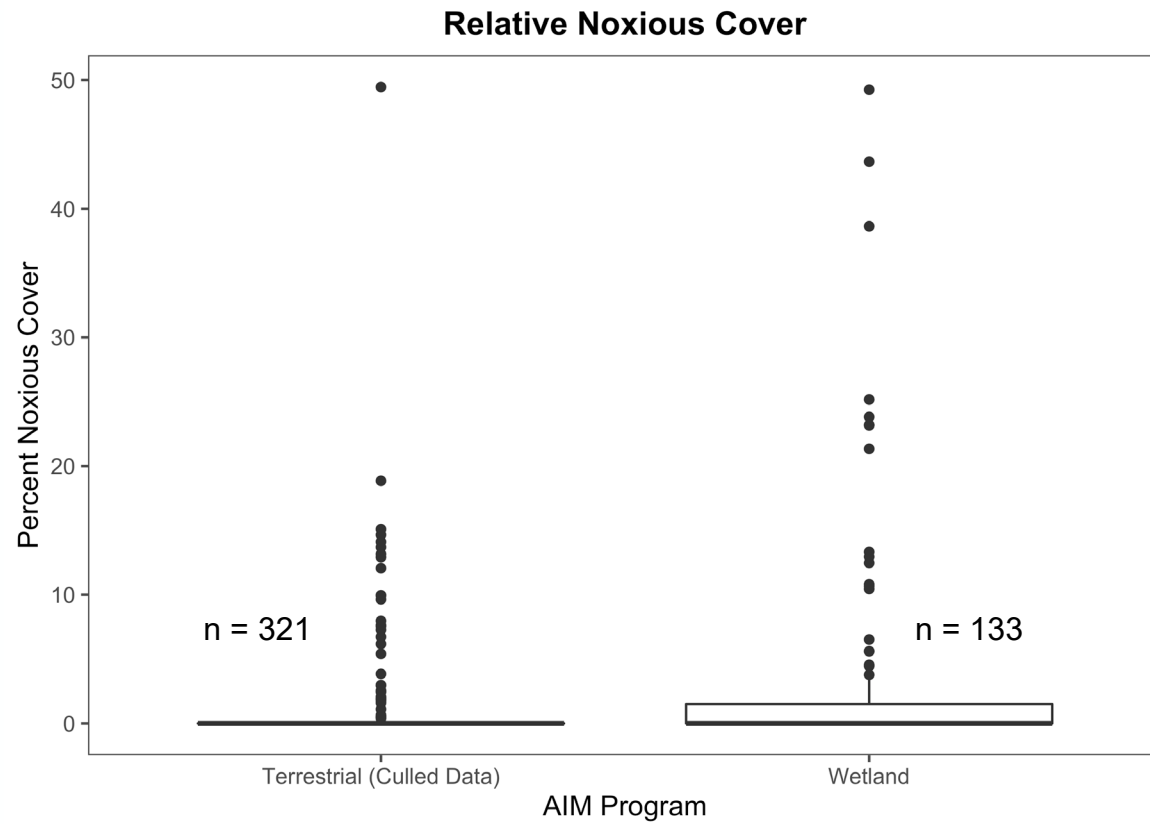
- **321 sites met the criteria**
- 212 had >50% hydrophytic cover
- 109 had 25-50% hydrophytic cover
AND met an additional criteria
- Less than 1% of all Terrestrial sites



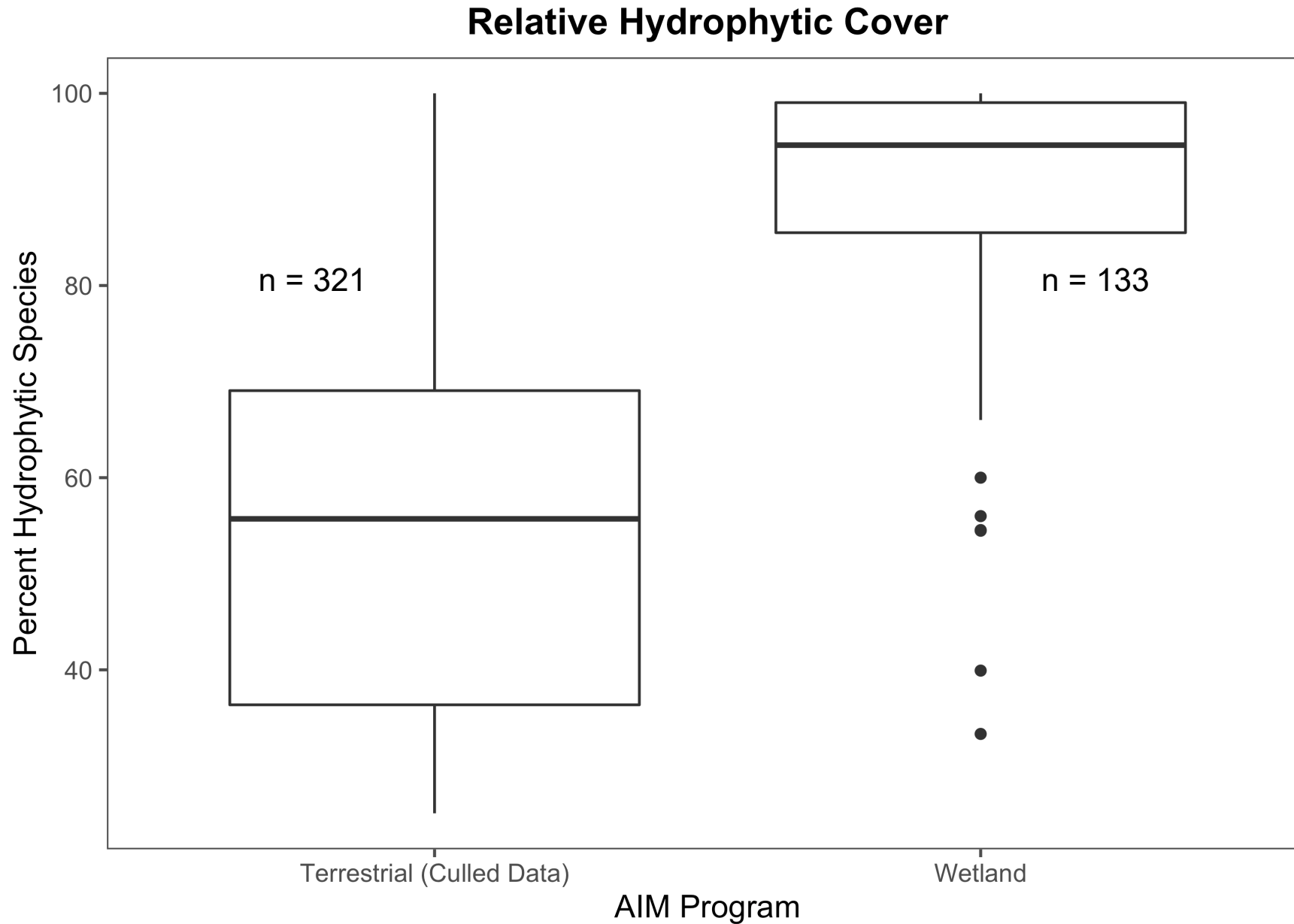
Preliminary Results



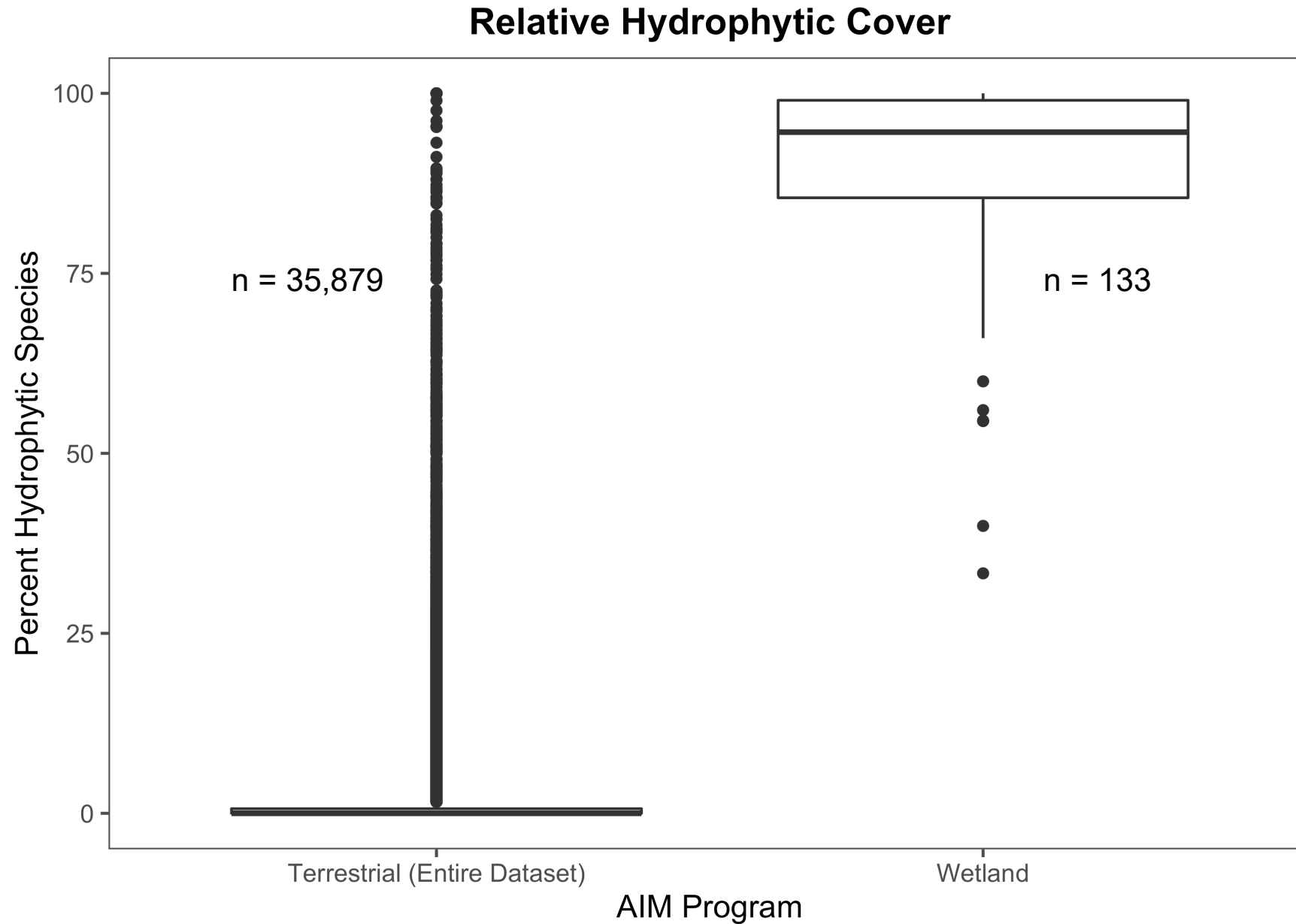
Preliminary Results



Preliminary Results



Preliminary Results



Implications: Targeted Sampling

- Similarities suggest Terrestrial is capturing similar data
- BUT, discrepancy in hydrophytic cover indicates there might be more to the story
- Targeted wetland sampling is necessary



Future Directions

- Compare:
 - % *native species*
 - % *invasive species*
 - % *surface water*
 - *Proximity of sites to NWI, NHD polygons*
 - % *cover*



Future Directions

- Multivariate analyses
 - *determine driving forces of plant community composition*
 - *Wetland AIM data only*



Conclusion

- First attempt at analyzing wetland AIM data
- Wetland AIM program provides valuable, unique information
- Large scale management could have a huge impact



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Questions?



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